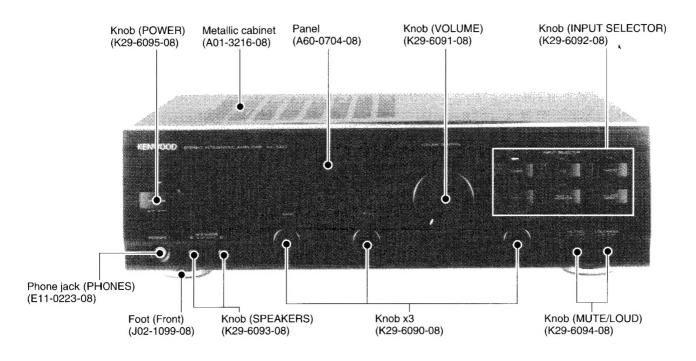
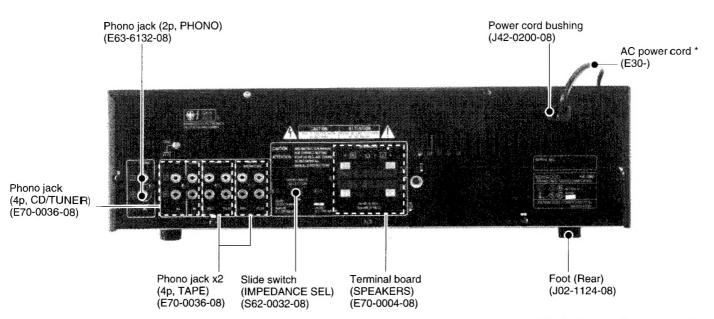
STEREO INTEGRATED AMPLIFIER

# KA-1060 SERVICE MANUAL



©1994-9 PRINTED IN KOREA B51-4912-00 (K) 2758





\* Refer to parts list on page 14.

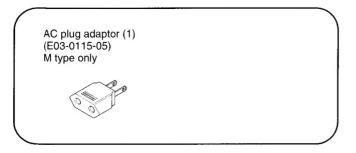
### Caution:

Signal ground floats from chassis ground. Please connect the cold lead of tester or oscilloscope to the cold terminal of speaker or input jack if check and/or measure the voltage.(Don't connect ground of unit.)

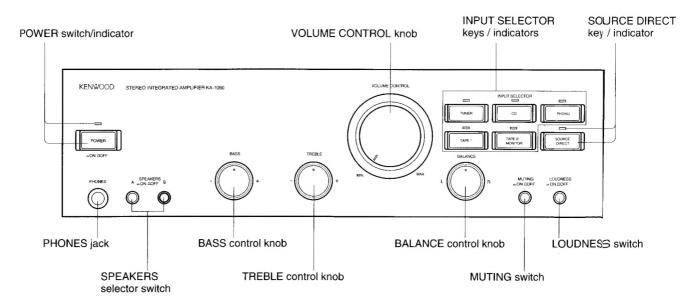
### **CONTENTS / ACCESSORIES**

CONTROLS2	SCHEMATIC DIAGRAM
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PC BOARD5	SPECIFICATIONSBack cove

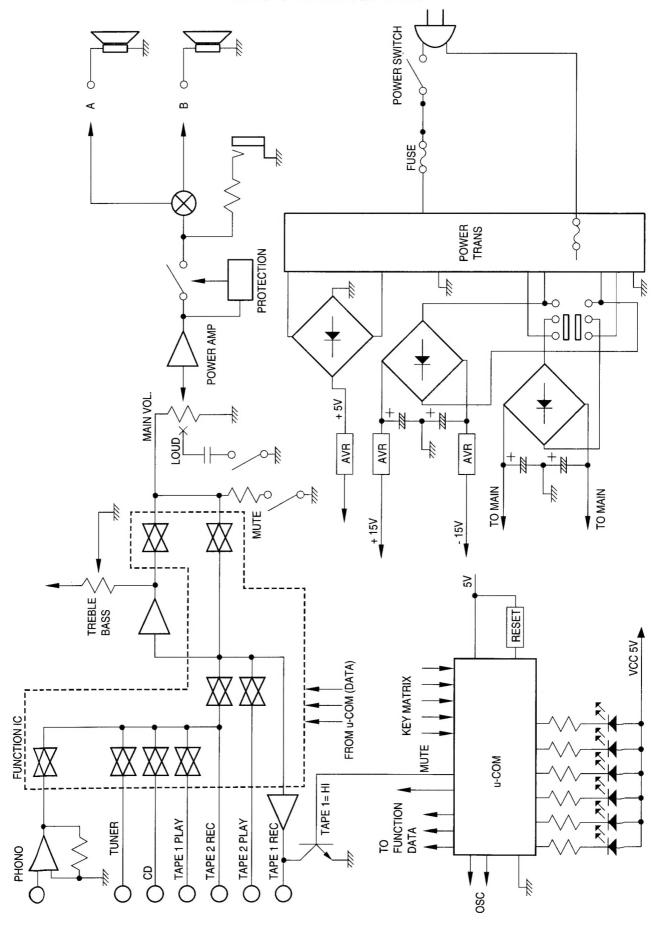
### **Accessories**



### **Controls**



# **BLOCK DIAGRAM**



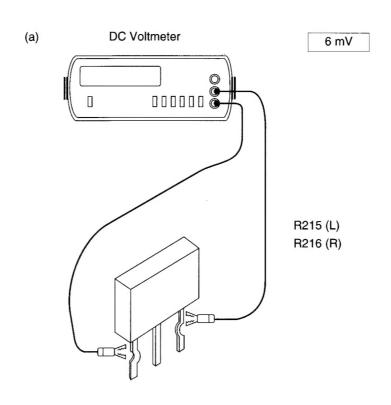
### **ADJUSTMENT / AJUSTES**

### **ENGLISH**

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unle		ed, the indivi	dual switches should SELECTOR:PHONO				
1	IDLE CURRENT	_	Connect a DC voltmeter between R215 (Lch), R216 (Rch). (MAIN PCB)	VOLUME: 0	VR101 (L) VR102 (R) (MAIN PCB)	13 mV (30mA)	(a)

### **ESPANÓL**

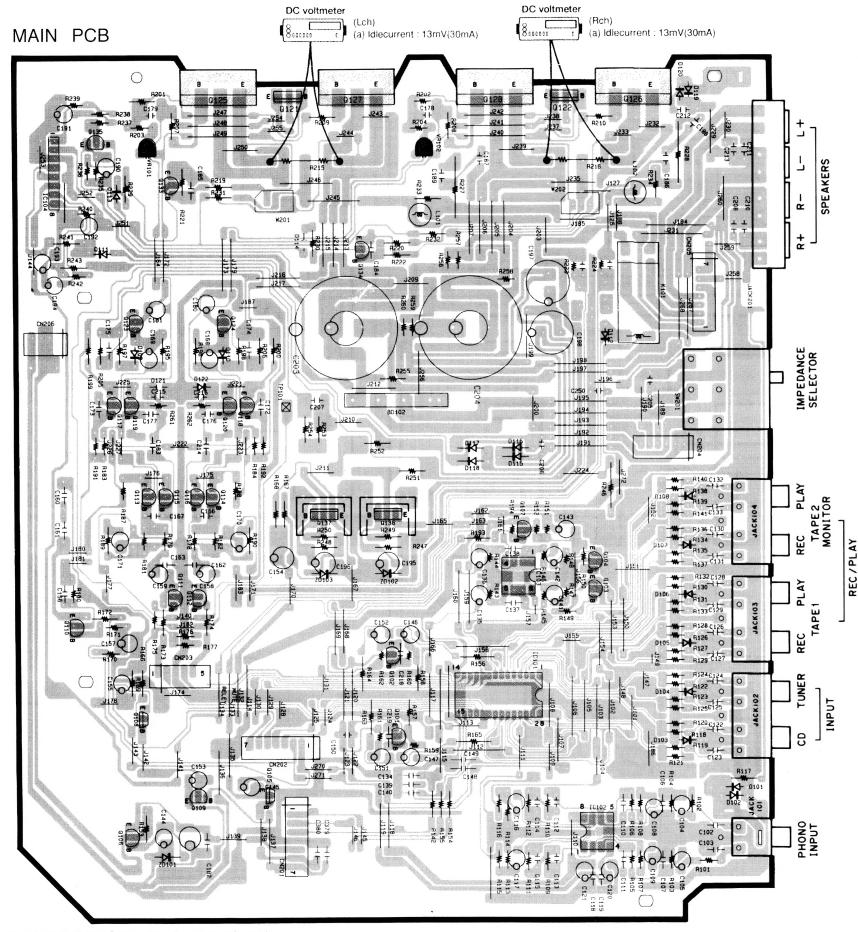
N.°	ÍТЕМ	AJUSTES DE ENTRADA	AJUSTES DE SALIDA	AJUSTES DEL AMPLIFICADOR	PUNTOS DE ALINEACIÓN	ALINEACIÓN PARA	FIG.
A me	•	ifique otra cosa SPEAKER:B	, los controles individ SELECTOR:PHONO	-	rarse de la forma si	guiente:	
1	OCIOSA CORRIENTE	_	Conecte un voltímetro de CC entre R215(L) y R216 (R). (MAIN PCB)	VOLUME: 0	VR101 (L) VR102 (R) (MAIN PCB)	13 mV (30mA)	(a)

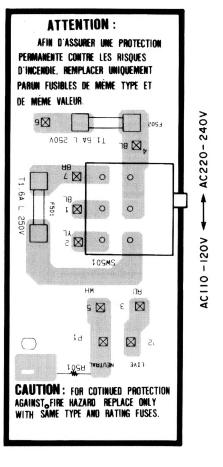


### Caution:

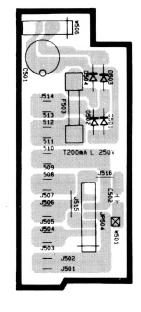
Signal ground floats from chassis ground. Please connect the cold lead of tester or oscilloscope to the cold terminal of speaker or input jack if check and/or measure the voltage.(Don't connect ground of unit.)

# PC BOARD (COMPONENT SIDE VIEW)

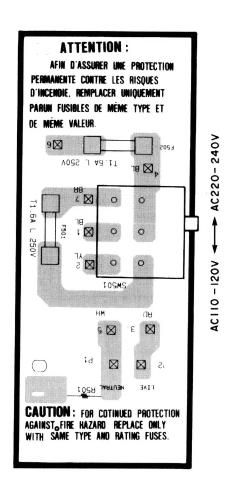




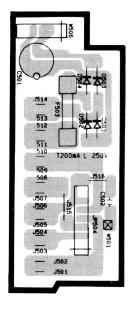
### POWER PCB

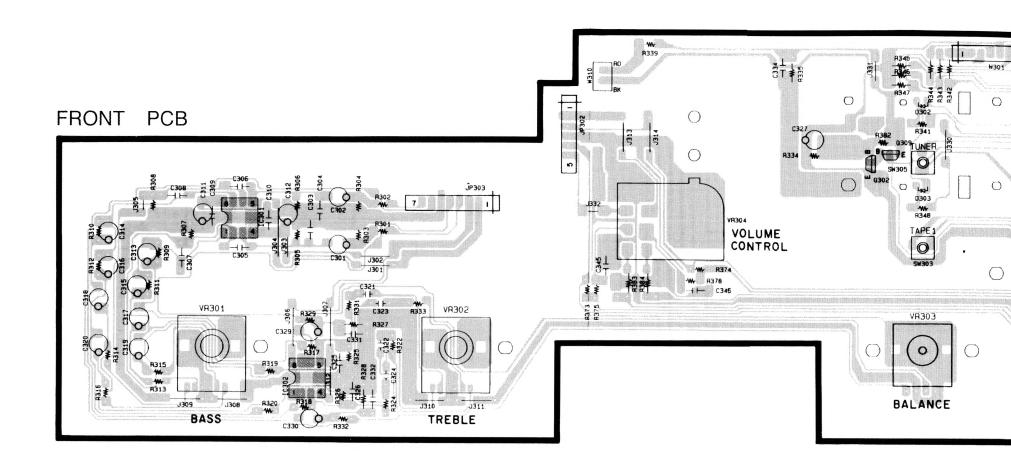


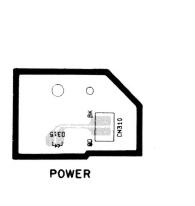
# PC BOARD (COMPONENT SIDE VIEW)

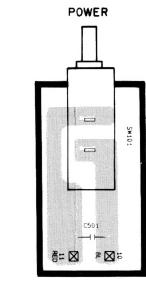


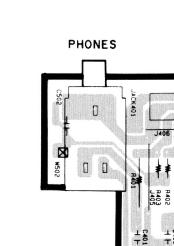








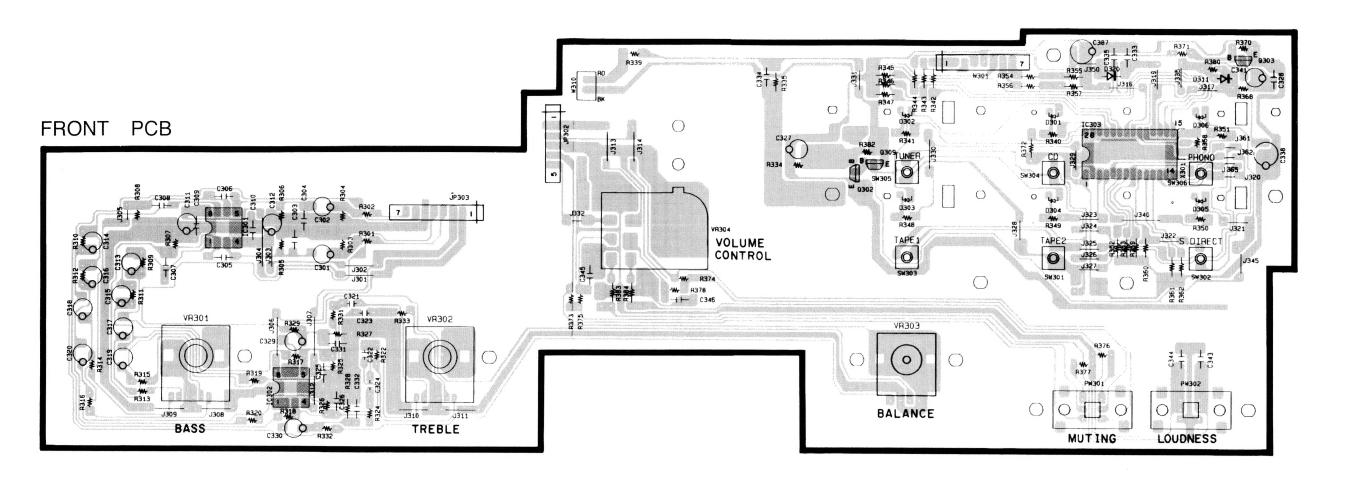


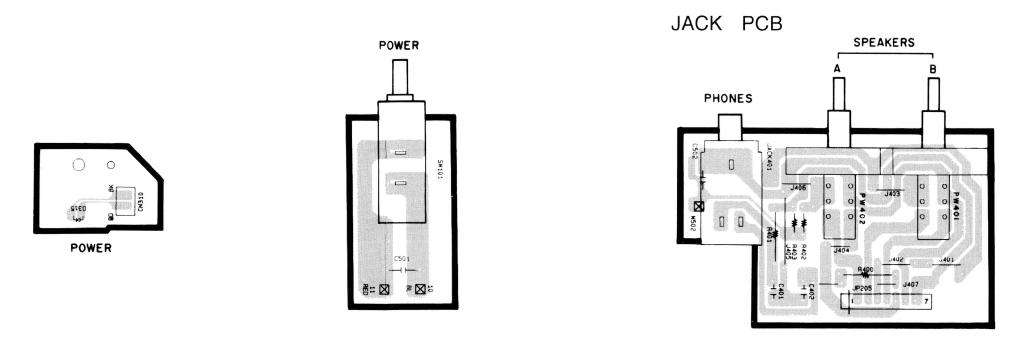


JACK PCB

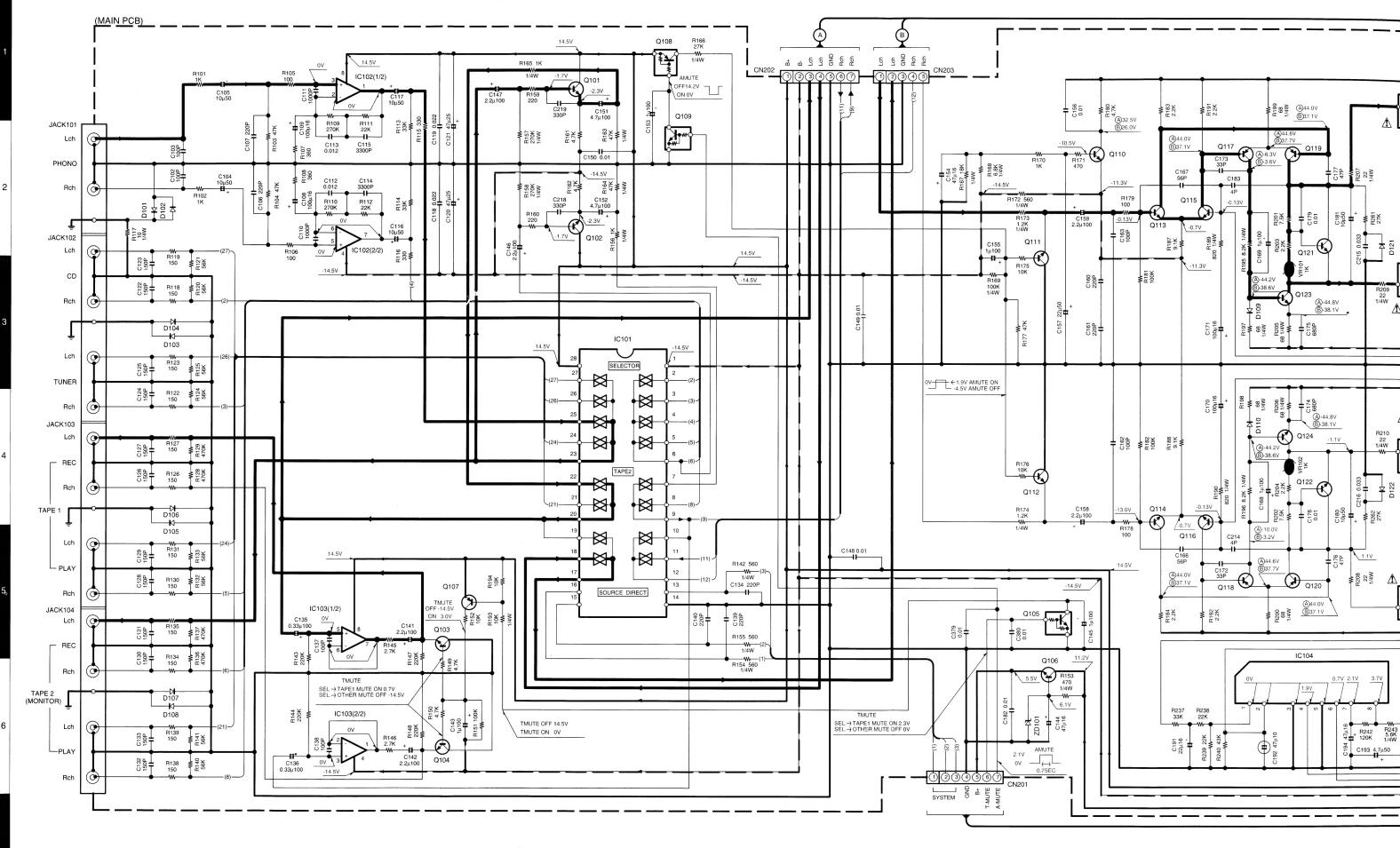
Refer to the schematic diagram for the value of resistors and capacitors.

# **BOARD (COMPONENT SIDE VIEW)**



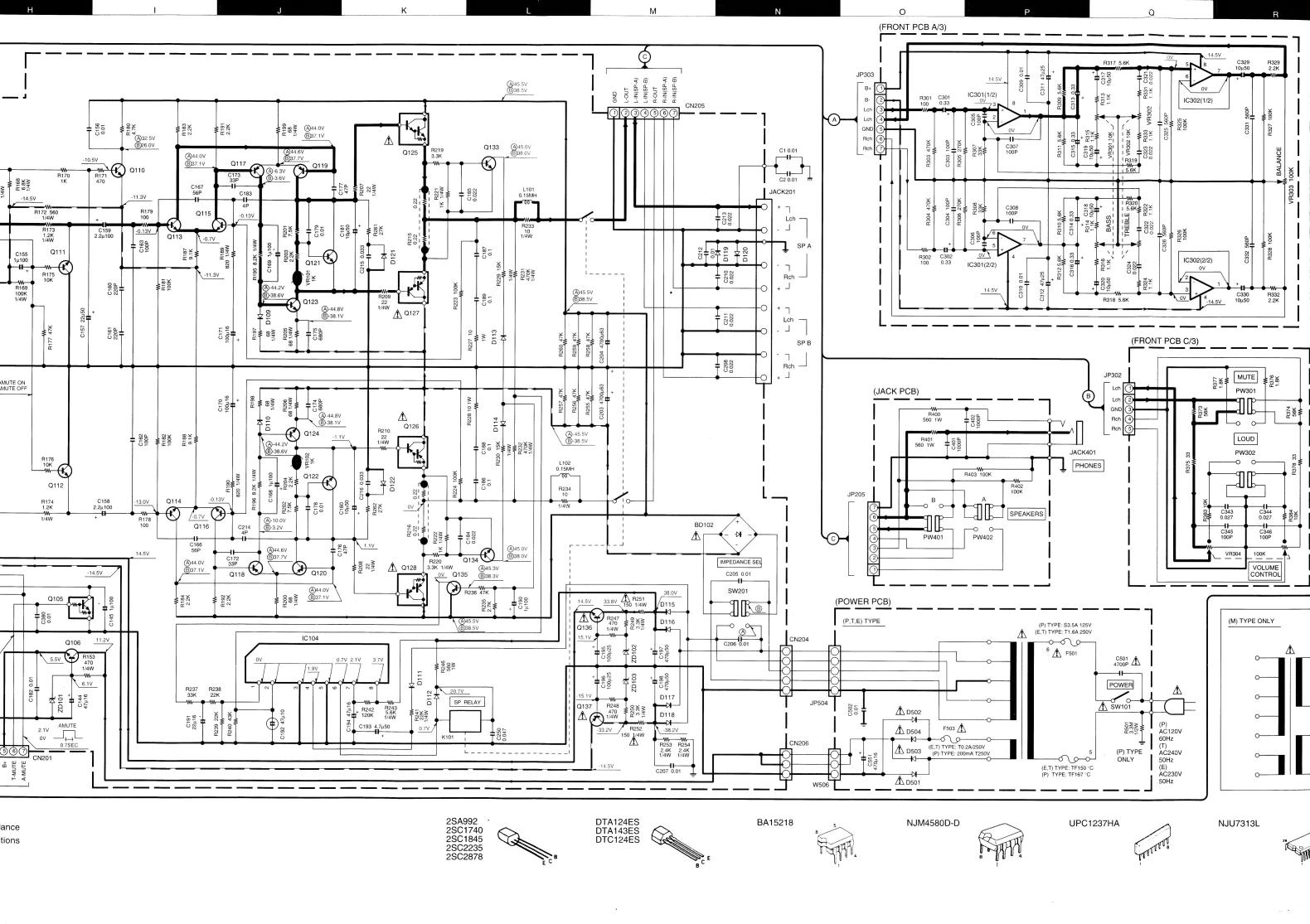


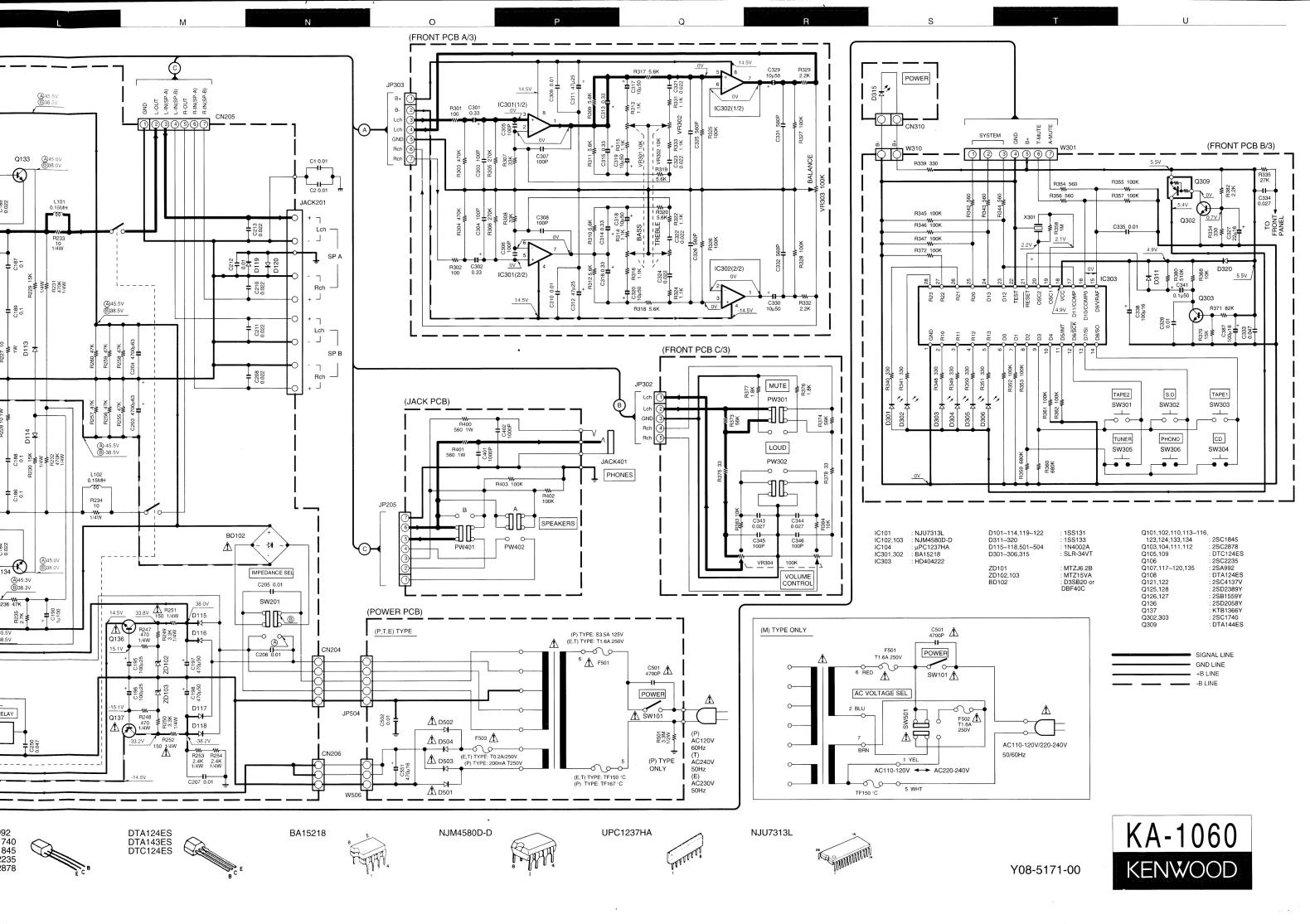
er to the schematic diagram for the value of resistors and capacitors.



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\triangle$  indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is retuned to the customer.

• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.





# KA-1060 KA-1060

# **EXPLODED VIEW**

# HA HA PASS THEBLE VR301 VR302

# **PARTS LIST**

\* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. 1	No.	Addre		New Parts		rts N	0.	Description Desti- Re-
参照者	番号	位	置	新		品番	号	部品名/規格 仕 向備者
KA-1060								
601 603		1 A 2 A		*	A01-32 A60-07			METALLIC CABINET PANEL
605 606 607 -		2A 2A 2A		*	B43-02 B12-02 B12-02 B46-01 B46-01	50-08 51-08 21-3	8 8 3	KENWOOD BADGE INDICATOR (INPUT SELECTOR) INDICATOR (POWER) WARRANTY CARD WARRANTY CARD E
				* * * *	B46-01 B60-18 B60-18 B60-18 B60-18	20-08 21-08 22-08	8 8 8	WARRANTY CARD INSTRUCTION MANUAL (EN) PMTE INSTRUCTION MANUAL (F) INSTRUCTION MANUAL (SP) INSTRUCTION MANUAL (C)
-				* * *	B60-18 B60-18 B60-18	25-0	8	INSTRUCTION MANUAL (TAIWAN) M INSTRUCTION MANUAL (F/G/D/I/S) E INSTRUCTION MANUAL (G) G
610 611 611 611		1 A 1 C 1 C 1 C		*	E03-01 E30-27 E30-27 E30-28	18-09 99-08	5 8	AC PLUG ADAPTOR AC POWER CORD T AC POWER CORD AC POWER CORD P
- -				* * * *	H50-12 H50-12 H10-59 H25-15 H25-15	93-08 76-08 44-08	8 8 8	ITEM CARTON CASE ITEM CARTON CASE POLYSTYRENE FOAMED FIXTURE PROTECTION BAG (SET) PROTECTION BAG (MANUAL)
620 621 622 623		2B 2C 1C 2B,2	2C	* * *	J02-10 J02-11 J42-02 J19-37	24-08 00-08	B B	FOOT ASSY FRONT FOOT REAR POWER CORD BUSHING UNIT HOLDER
630 631 632 633 634		2A 2B 2A 2A 2A	The second secon	* * * * * *	K29-60 K29-60 K29-60 K29-60 K29-60	92-08 90-08 95-08	3 3 3	KNOB (VOLUME CONTROL) KNOB (INPUT SELECTOR) KNOB (BASS/TREBLE/BALANCE) KNOB (POWER) KNOB (SPEAKERS)
635		2B		*	K29-60	94-08	3	KNOB (MUTING/LOUDNESS)
640 640 640 640		1 B 1 B 1 B 1 B		* * * * *	L07-19 L07-19 L07-19 L07-19	05-08 06-08	3 3	POWER TRANSFORMER POWER TRANSFORMER POWER TRANSFORMER POWER TRANSFORMER T
A B C D E		2A,2 1A 1A,1 2B,2 1C,2	ВС	*	N89-30 N09-30 N89-30 N09-31 N89-30	94-08 06-46 59-08	3 5 3	BIND HD TAPTITE SCREW M3X8 BIND HEAD SCREW M3X8 BIND HD TAPTITE SCREW M3X6 BIND HEAD SCREW M3X17 BIND HD TAPTITE SCREW M3X8 BLK
F G H J		1C 1C 1B,2	!B	*	N09-31 N89-30 N09-30 N84-30	14-46 95-08	3	SCREW WITH WASHER M3X14 BIND HD TAPTITE SCREW M3X14 BIND HEAD SCREW M4X8 GND TERMINAL
-0.1								RICAL UNIT
C1 ,2 C102,1 C104,1	03				CK45FB CC45CH CE04KW	1H101	IJ	CERAMIC 0.010UF M CERAMIC 100PF J ELECTRO 10UF 50WV

L:Scandinavia K:USA P:Canada G:Germany Y:PX(Far East, Hawaii) T:England E:Europe Y:AAFES(Europe) X:Australia M:Other Areas

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# KA-1060 KA-1060

### **PARTS LIST**

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Ref. No.	Ref. No. Address New Parts		No.	Description				Desti-	Re-		
参照番号		Parts 新	部	品	番号	部	品	名/規	格		mark 備考
C106,107 C108,109 C110,111 C112,113 C114,115		*	CC45C CE04K CK45F CQ92F CQ92F	W1C B1H M1H	101M 102J 123J	CERAMIC ELECTRO CERAMIC MYLAR MYLAR		220PF 100UF 1000PF 0.012UF 3300PF	J 16WV J J		
C116,117 C118,119 C120,121 C122-133 C134			CE04K CK45F CE04K CC45S CC45C	F1H W1E L1H	223Z 470M 151J	ELECTRO CERAMIC ELECTRO CERAMIC CERAMIC		10UF 0.022UF 47UF 150PF 220PF	50WV Z 25WV J J		
C135,136 C137,138 C139,140 C141,142		*	CE04K CC45C CC45C CE04K CE04K	H1H H1H: W2A:	101J 221J 2R2M	ELECTRO CERAMIC CERAMIC ELECTRO ELECTRO		0.33UF 100PF 220PF 2.2UF 1.0UF	100WV J J 100WV 100WV		
C144 C145 C146,147 C148,149 C150			CE04K CE04K CE04K CK45F CK45F	W2A: W2A: B1H	010M 2R2M 103M	ELECTRO ELECTRO ELECTRO CERAMIC CERAMIC	:	47UF 1.0UF 2.2UF 0.010UF	16WV 100WV 100WV M K		
C151,152 C153 C154 C155 C156			CE04K CE04K CE04K CE04K CK45F	W2A W1C W2A	010M 470M 010M	ELECTRO ELECTRO ELECTRO ELECTRO CERAMIC		4.7UF 1.0UF 47UF 1.0UF 0.010UF	100WV 100WV 16WV 100WV M		
C157 C158,159 C160,161 C162,163 C166,167			CE04KI CE04KI CC45CI CC45CI CC45CI	₩2A2 H1H2 H1H1	2R2M 221J 101J	ELECTRO ELECTRO CERAMIC CERAMIC CERAMIC	:	22UF 2.2UF 22OPF 10OPF 56PF	50WV 100WV J J		
C168,169 C170,171 C172,173 C174,175 C176,177			CE04KI CE04KI CC45CI CC45SI CC45CI	W1C: H1H: L1H:	101M 330J 581J	ELECTRO ELECTRO CERAMIC CERAMIC CERAMIC		1.0UF 100UF 33PF 580PF 17PF	100WV 16WV J J		
C178,179 C180,181 C182 C184,185 C186-189			CK45FE CE04KE CK45FE CK45FE CQ92FE	V1H1 B1H1 F1H2	100M 103M 223Z	CERAMIC ELECTRO CERAMIC CERAMIC MYLAR	1	0.010UF 0UF 0.010UF 0.022UF 0.10UF	K 50WV M Z J		
C190 C191 C192 C193 C194			CEO4KV CEO4KV CEO4KV CEO4KV	V1C2 V1A4 V1H4	220M 170M 1R7M	ELECTRO ELECTRO ELECTRO ELECTRO ELECTRO	4	OUF 22UF 7UF 1.7UF	100WV 16WV 10WV 50WV 16WV		
0195,196 0197,198 0203,204 0205,206		*	CEO4KV CEO4KV CEO4KV CK45FF CQ92FN	11H4 11J4 11H1	71M 72M 03Z	ELECTRO ELECTRO ELECTRO CERAMIC MYLAR	4	00UF 70UF 700UF 0.010UF	25WV 50WV 63WV Z J		
0208 0210,211 0212 0213 0215,216		-	CK45FF CK45FF CK45FF CK45FF CQ92FM	1H2 1H1 1H2	23Z 03K 23Z	CERAMIC CERAMIC CERAMIC CERAMIC MYLAR		.022UF .022UF .010UF .022UF	Z Z K Z J		

**L**:Scandinavia Y:PX(Far East, Hawaii) Y:AAFES(Europe)

K:USA P:Canada T:England E:Europe X:Australia M:Other Areas

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	Ref. No.	Address	New	Parts No.	Description	Desti-	Re-
	参照番号	位 置	新	部品番号	部品名/規格	nation 仕 向	marks 備考
	C218,219 C250 C301,302 C303-308 C309,310			CK45FB1H331K CQ92FM1H473J CE04KW1HR33M CC45CH1H101J CK45FB1H103M	CERAMIC 330PF K MYLAR 0.047UF J ELECTRO 0.33UF 50WV CERAMIC 100PF J CERAMIC 0.010UF M		
	C311,312 C313-316 C317-320 C321-324 C325,326		*	CE04KW1E470M CE04KW1HR33M CE04KW1H100M CQ92FM1H223J CK45SL1H561J	ELECTRO 47UF 25WV ELECTRO 0.33UF 50WV ELECTRO 10UF 50WV MYLAR 0.022UF J CERAMIC 560PF J		
	C327 C328 C329,330 C331,332 C333		*	CE04KW1C220M CK45FB1H103K CE04KW1H100M CK45SL1H561J CK45FB1H473Z	ELECTRO 22UF 16WV CERAMIC 0.010UF K ELECTRO 10UF 50WV CERAMIC 560PF J CERAMIC 0.047UF Z		
	C334 C335 C338 C341 C343,344			CQ92FM1H273J CK45FB1H103K CE04KW1C101M CE04KW1H0R1M CQ92FM1H273J	MYLAR 0.027UF J CERAMIC 0.010UF K ELECTRO 100UF 16WV ELECTRO 0.1UF 50WV MYLAR 0.027UF J		
$\Lambda$	C345,346 C379,380 C387 C401,402 C501			CC45CH1H101J CK45FB1H103M CE04KW1C101M CC45CH1H102J KHR-QM4726M6	CERAMIC 100PF J CERAMIC 0.010UF M ELECTRO 100UF 16WV CERAMIC 1000PF J CERAMIC 4700PF 250WV		
	C502 C551			CK45FB1H103M CE04KW1C471M	CERAMIC 0.010UF M ELECTRO 470UF 16WV		
	JACK101 JACK102- JACK201 JACK401	104	*	E63-0132-08 E70-0036-08 E70-0004-08 E11-0223-08	PHONO JACK(2P) PHONO PHONO JACK(4P) CD/TUNER/TAPE TERMINAL BOARD(SPEAKERS) PHONE JACK PHONES		
	F501 F501 F502 F503 F503		*	F05-1623-05 F50-0059-08 F05-1623-05 F05-2015-05 F50-0060-08	FUSE T1.6A/250V FUSE 3.5A/125V FUSE T1.6A/250V FUSE T0.2A/250V FUSE 200mA/T250V	MET P M MET P	
	L101,102 L103,104 X301			L39-1303-08 L33-0381-08 L78-0617-08	SMALL FIXED INDUCTOR(0.15UH) SMALL FIXED INDUCTOR CRYSTAL RESONATOR(4.00MHz)		
	R197-200 R205,206 R207-210 R215,216 R227,228			RD14GB2E680J RD14GB2E680J RD14GB2E220J KHR-RTOR25K0 RS14DB3A100J	FL-PR00F RD 68 J 1/4W FL-PR00F RD 68 J 1/4W FL-PR00F RD 22 J 1/4W CEMENT 0.22 3W FL-PR00F RS 10 J 1W		
<b>A</b>	R246 R251,252 R400,401 R501 VR101,102			RS14DB3A561J RD14GB2E151J RS14DB3A561J R92-1769-05 R12-1066-05	FL-PROOF RS 560 J 1W FL-PROOF RD 150 J 1/4W FL-PROOF RS 560 J 1W CARBON 3.3M J 1/2W POTENTIOMETER 1KB	P	
	VR301,302 VR303 VR304		*	R39-0003-08 R39-0004-08 R39-0005-08	POTENTIOMETER 10KBX2 POTENTIOMETER 200KB(BALANCE) POTENTIOMETER 100KBX2(VOLUME)		
	K101			S76-0035-08	POWER RELAY		

L:Scandinavia Y:PX(Far East, Hawaii) Y:AAFES(Europe)

K:USA P:Canada T:England E:Europe X:Australia M:Other Areas

### **PARTS LIST**

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	Address	Parts	Parts No.	Description		Re- narks
参照番号	位置	新	部品番号	部品名/規格		備考
PW301,302 PW401,402 SW101 SW201 SW301-306		*	S68-0040-08 S68-0045-08 S40-1089-05 S62-0032-08 S70-0030-08	PUSH SWITCH PUSH SWITCH PUSH SWITCH PUSH SWITCH SLIDE SWITCH IMPEDANCE SEL TACT SWITCH		
SW501		*	S62-0046-08	SLIDE SWITCH AC VOLTAGE SEL	М	
BD102 BD102 D101-114 D115-118 D119-122			DBF40C D3SB20 1SS131 1N4002A 1SS131	DIODE DIODE DIODE DIODE		
D301-306 D311 D315 D320 D501-504		*	SLR-34VT 1SS133 SLR-34VT 1SS133 1N4002A	DIODE DIODE DIODE DIODE		
IC101 IC102,103 IC104 IC301,302 IC303		*	NJU7313L NJM4580D-D UPC1237HA BA15218 HD404222	IC(ANALOG SWITCH) IC(OP AMP X2) IC(POWER AMP) IC(OP AMP X2) U-COM		
Q101,102 Q103,104 Q105 Q106 Q107			2SC1845 2SC2878 DTC124ES 2SC2235 2SA992	TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR		
Q108 Q109 Q110 Q111,112 Q113-116			DTA124ES DTC124ES 2SC1845 2SC2878 2SC1845	DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q117-120 Q121,122 Q123,124 Q125 Q126,127			2SA992 2SC4137V 2SC1845 2SD2389Y 2SB1559Y	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q128 Q133,134 Q135 Q136 Q137			2SD2389Y 2SC1845 2SA992 2SD2058Y 2SB1366Y	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q302,303 Q309 ZD101 ZD102,103			2SC1740 DTA143ES MTZJ6.2B MTZ15VA	TRANSISTOR DIGITAL TRANSISTOR ZENER DIODE ZENER DIODE		
ZD101				MTZJ6.2B	MTZJ6.2B ZENER DIODE	MTZJ6.2B ZENER DIODE

L:Scandinavia

K:USA

P:Canada

Y:PX(Far East, Hawaii)

T:England

**E**:Europe

Y:AAFES(Europe)

X:Australia

M:Other Areas

### **SPECIFICATIONS**

Continuous rated	nower output
(DIN) 1 kHz,	
(BIII) 1 KIIZ,	at 4 $\Omega$
(IEC / NE) Er	om 63 Hz ~ 12,500 Hz, 0.7 % T.H.D.
(ILC / NI ) [1	at 8 $\Omega$
	at 4 $\Omega$
Damping factor	40 (50 Hz)
Total harmonic d	
	0.06 % (40 Hz $\sim$ 20,000 Hz, 50 W, 8 $\Omega$ )
	0.00 % (40 H2 ~ 20,000 H2, 30 W, 8 Ω)
	listortion0.05 % (1 K12, 00 W, 8 Ω)
(70 Hz : 7 kH	
Frequency response	
	/ TAPE10 Hz ∼ 60 kHz, +0 dB, -3 dB
	esponse20 Hz ~ 20 kHz, +0.3 dB, -0.3 dB
Maximum input le	
	)100 mV, 0.05% T.H.D. at 1 kHz
Signal to noise ra	
-	)75 dB (IHF '66)
	,73 dB (IHF '78)
	/ TAPE100 dB (IHF '66)
	90 dB (IHF '78)
	)57 dB (DIN, 50 mW output)
•	/ TAPE63 dB (DIN 50 mW output)
Input sensitivity /	
	)2.5 mV / 47 kΩ
•	/ TAPE200 mV /47 kΩ
Tone control	, , , , , , , , , , , , , , , , , , , ,
	±10 dB (at 100Hz)
	±10 dB (at 10 kHz)
Loudness contro	
	-30 dB level)+8 dB (100 Hz)
Output level / imp	
	200 mV / 330 Ω
General	
	ion170 W
AC outlets	
SWITCHED	For U.K. 2; (Total 200 W max.)
	For Europe 3; (Total 200 W max.)
	H : 134 mm
	D : 250 mm
Weight (Net)	5.6 kg
(	

### Note:

Component and circuity are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

### For other countries

Continuous rated power output	
From 40 Hz ~ 20,000 Hz, 0.03 % T.H.I	O.
at 8 Ω	60 W + 60 W
(IEC / NF) From 63 Hz ~ 12,500 Hz, 0.	.7 % T.H.D.
at 8 $\Omega$	60 W + 60 W
at 4 $\Omega$	60 W + 60 W

Rated power output (For Canada)

50 watts per channel minimum RMS, both channels driven, at 8  $\Omega$  from 40 Hz to 20,000 Hz with no more than 0.06% total harmonic distorsion. (FTC)

Damping factor	40 (50 Hz)
Total harmonic distortion	
0.06 % (40 Hz	~ 20,000 Hz, 50 W, 8 Ω)
0.	
Intermodulation distortion	
(70  Hz : 7  kHz = 4 : 1)	, , ,
Frequency response	
CD / TUNER / TAPE10 Hz	$z \sim 60 \text{ kHz}$ , +0 dB, -3 dB
PHONO 'RIAA' response20 Hz ~ 2	
Maximum input level	,
PHONO (MM)100 mV	/. 0.05% T.H.D. at 1 kHz
Signal to noise ratio	•
PHONO (MM)	75 dB (IHF '66)
	,
CD / TUNER / TAPE	
Input sensitivity / impedance	( - /
PHONO (MM)	2.5 mV / 47 kΩ
CD / TUNER / TAPE	
Tone control	
BASS	±10 dB (at 100Hz)
TREBLE	
Loudness control	,
(VOLUME at -30 dB level)	+8 dB (100 Hz)
Output level / impedance	,
TAPE REC	200 mV / 330 Ω
General	
Power consumption	170 W
AC outlets	
SWITCHED	3; (Total 200 W max.)
For Austral	
Dimensions	
	H : 134 mm (5-1/4")
	D : 250 mm (9-13/16")
	,

### KENWOOD CORPORATION

Weight (Net) ......5.6 kg (12.3 lb)

14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo, 150 Japan